

Patent Claims

1. An arrangement (A) for cooling recirculated exhaust gas (AG) and charge air (LL) in a motor vehicle
5 with a turbocharger, comprising at least one heat exchanger for the exhaust gas stream and one heat exchanger for the charge air stream, characterized in that at least one heat exchanger for the exhaust gas stream and one heat exchanger for the charge air stream
10 are part of a common low temperature coolant circuit (NK).
2. The arrangement as claimed in claim 1, characterized in that the two heat exchangers are
15 connected in parallel in the low temperature coolant circuit (NK).
3. The arrangement as claimed in claim 1 or 2, characterized in that a pump (ZWP) is arranged in the
20 low temperature coolant circuit (NK).
4. The arrangement as claimed in claim 3, characterized in that the pump (ZWP) is controllable or
25 switchable.
5. The arrangement as claimed in either of claims 3 and 4, characterized in that the pump (ZWP) is arranged upstream of the branch-off of the low temperature coolant circuit (NK).
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6. The arrangement as claimed in one of the preceding claims, characterized in that part of the low temperature coolant circuit (NK) is an air-cooled low temperature coolant radiator (NKK).
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7. The arrangement as claimed in one of the preceding claims, characterized in that a throttle member for controlling the coolant stream in the low temperature

coolant circuit (NK) is arranged in one of the two parallel-connected regions of the low temperature coolant circuit (NK).

5 8. The arrangement as claimed in claim 7, characterized in that the throttle member is a controllable throttle valve (DV).

9. The arrangement as claimed in claim 7 or 8,
10 characterized in that the throttle member comprises an expansion element.

10. The arrangement as claimed in one of claims 7 to 9, characterized in that the throttle member is
15 arranged at the coolant outlet of the charge air cooler (LLK).

11. A method of cooling exhaust gas and charge air using an arrangement for cooling recirculated exhaust
20 gas (AG) and charge air (LL) in a motor vehicle with a turbocharger, comprising at least one heat exchanger for the exhaust gas stream and one heat exchanger for the charge air stream, characterized in that coolant from the same low temperature coolant circuit (NK) is
25 used for cooling the recirculated exhaust gas (AG) and the charge air (LL).

12. The method as claimed in claim 11, characterized in that more than 50% of the coolant is fed to the
30 exhaust gas cooler (AGK) at low and medium engine loads and speeds.

13. The method as claimed in claim 11 or 12, characterized in that more than 50% of the coolant is
35 fed to the charge air cooler (LLK) at high engine loads and speeds, in particular in the full load range.